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NOPPARAT SAE-LEE : PHARMACOKINETICS OF SPARFLOXACIN IN HEALTHY
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Sparfloxacin is a new fluoroquinolone antibacterial agent claimed for the treatment of community-acquired pneumonia, acute bacterial exacerbations of chronic bronchitis, and acute maxillary sinusitis. This study was performed to investigate the pharmacokinetics of sparfloxacin following 200 mg single dose administered to the healthy Thai volunteers. Twelve subjects with an average age of 22.25 ± 1.76 years participated in the study. Following a 10-hr overnight fast, each subject received a single oral dose of 200 mg sparfloxacin. Venous blood samples were drawn prior to dosing and at 0.25, 0.5, 1, 1.5, 2, 3, 4, 5, 6, 10, 24, 48, 72, and 96 hr after dosing. Plasma samples were stored at -80°C until they were analysed by high performance liquid chromatography.

The pharmacokinetics of sparfloxacin were described by a noncompartment model. Maximum plasma concentration (mean \pm SD) was 0.68 ± 0.16 $\mu\text{g}/\text{mL}$, area under the plasma concentration-time curve from time zero to infinity was 15.84 ± 3.88 $\mu\text{g}\cdot\text{hr}/\text{mL}$, time to reach maximum plasma concentration was 4.54 ± 2.23 hr, apparent volume of distribution was approximately 5.41 L/kg, elimination half-life ($t_{1/2}$) was 16.69 ± 5.84 hr, mean residence time was 29.28 ± 12.01 hr, and apparent total body clearance was 13.43 ± 3.74 L/hr. These values were similar to those reported for Japanese subjects and Western subjects. The results suggested that dosing of sparfloxacin 200 mg once daily is likely to be effective to methicillin-susceptible *Staphylococcus aureus* and *Chlamydia pneumoniae* in Thai patients. However, for *Streptococcus pneumoniae* and *Mycoplasma pneumoniae*, this dosage regimen is likely to be ineffective in Thai patients. Sparfloxacin 200 mg is also likely to be ineffective to methicillin-resistant *S. aureus* in Thai patients as a consequence of higher MIC_{90} value.